**Solving a Problem about Work**

Example #1 method 1

Maggie and Angie are working on a campus cleanup. Maggie can clean up the trash in the area in 7hr., while Angie can do the same job in 5hr. How long will it take them if they work together?

Solution

Let x = the number of hours it will take the two people working together.

The rate for each person to complete the job alone is , where t is the time it takes for the person to complete the job alone.

Maggie’s rate = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Angie’s rate = \_\_\_\_\_\_\_\_\_\_\_\_\_

Since together they can complete 1 job, the sum of the fractional parts accomplished should equal 1.

Maggie’s rate + Angie’s Rate = 1

= 1

Solve for x.

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Example #1 Method 2

Let x represent the number of hours it takes two people working together to complete the entire job. In 1 hr., 1/x of the entire job will be complete. In 1hr, Maggie completes 1/7 of the job and Angie completes 1/5 of the job. Their rates should equal 1/x. This reasoning givs the equation

Solve for x.

Problem #1

Jerry and Tom are laying tile flooring. Working alone, Jerry can do the job in 20 hr. If the two of them can complete the job in 12 hr. How long would it take Tom to lay the floor working alone?

Problem #2

Mr. Cross is a high school science teacher. He can grade a set of chapter test in 5 hr working alone. If his student teacher can grade a set of tests in 8 hr, how long will it take them to grade a set together?

Problem #3

Amy and Keith want to pick up the mess that their daughter, Lilli has made in her playroom. Keith can do it in 15 min working alone. Amy, working alone can do it in 12 min. How long will it take them to do it together?